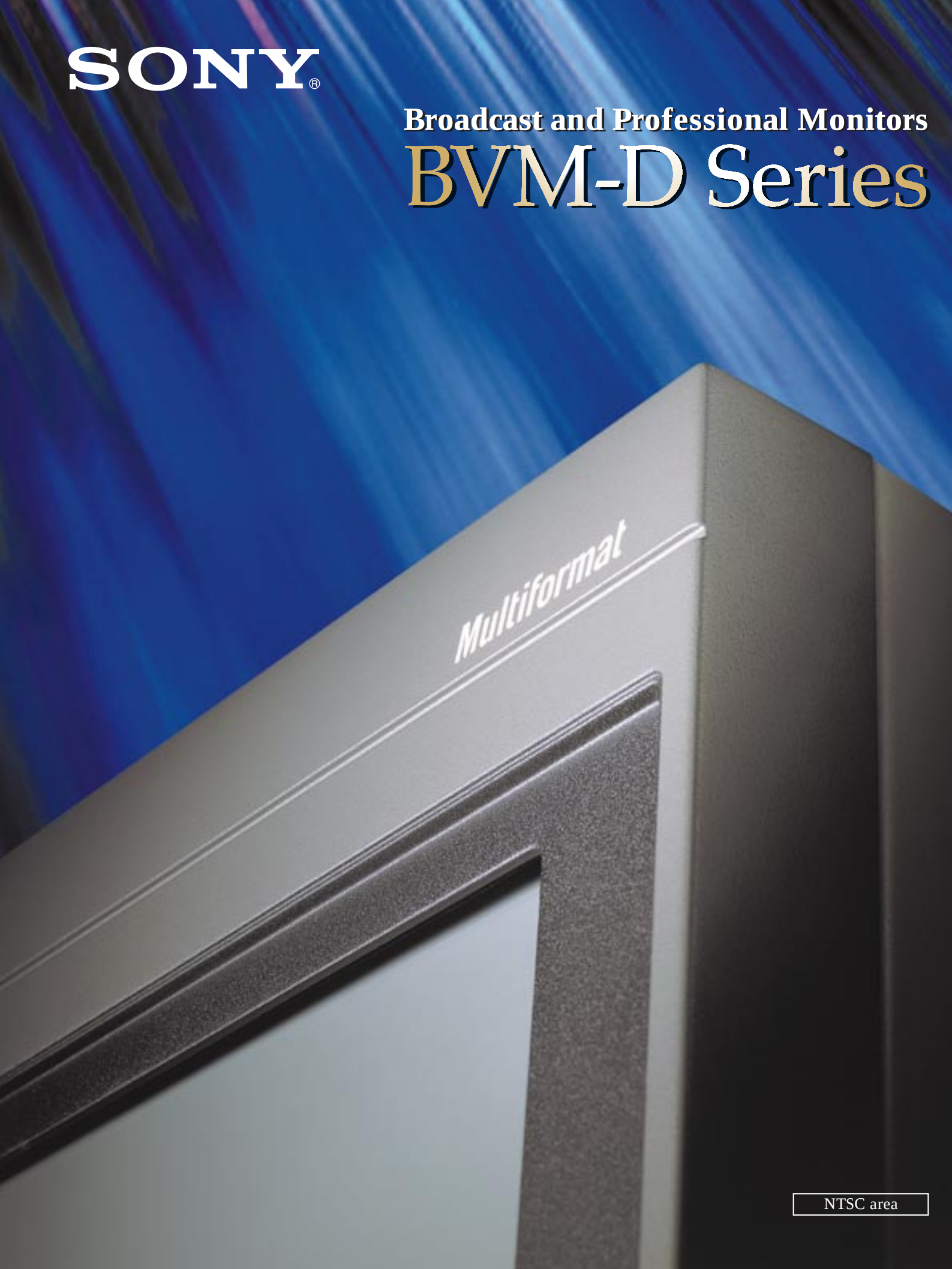
SONY

Broadcast and Professional Monitors

BVM-D Series



NTSC area

Defining Digital @Sony

Sony's legendary line of broadcast monitors now has a new family of additions. The BVM-D series digital monitors are optimized for the DTV world. They support 480I, 480P, 720P and 1080I inputs directly, with no need for a scan converter. They display each input signal at its native frequency and resolution with an extremely high degree of color accuracy. And they incorporate the patented, award-winning Trinitron® CRT system to deliver uncompromising quality and detail.

Multiformat Signal Support

These monitors accept the wide variety of digital signals necessary to allow you the freedom to produce in whatever format you choose: 480I, 480P, 720P or 1080I.

Sony Technology

To provide the highest possible picture quality, all BVM monitors are equipped with CRTs manufactured by Sony, using SMPTE-C standard phosphors*. New flat surface 16:9 aspect HR Trinitron CRTs have been developed exclusively for the BVM-D32E1WU and BVM-D24E1WU.

* P-22 phosphors are used in the BVM-D9H1U / D9H5U.

Functionality

This new BVM monitor series can be used in a variety of applications.

- Master monitors: BVM-D32E1WU / BVM-D24E1WU / D20F1U
- Picture monitors: BVM-D14H1U / D14H5U / D9H1U / D9H5U
- Field use: BVM-D9H1U / D9H5U

SONY

Line-up

A Complete line-up of DTV Ready Monitors

Designed specifically to meet your diverse DTV requirements, while also supporting the interfaces, infrastructures, and archival formats you are using now.

Only Sony can provide you with the complete line-up — from 32” master monitors to 9” picture and field-use monitors — that you will need as you make your transition to digital. And only Sony provides the technology to enable you to continue using your current monitors next to your new digital monitors in one integrated system.

Master Monitor

- 32”, 24" and 20" monitors*
- Newly developed flat surface, 16:9 aspect HR Trinitron CRTs for the 32” and 24" master monitors
- Resolution of 1000 TV lines (32” and 24" in 4:3 / 16:9 modes) and 900 / 700 TV lines (20" in 4:3 / 16:9 modes)

BVM-D24E1WU display unit with optional BKM-10R and BKM-34H attached

Picture Monitor

- 14” and 9” monitors*
- Display unit (BVM-D14H1U / D9H1U) and stand-alone (BVM-D14H5U / D9H5U) monitors for greater flexibility in system integration
- Resolution of 800 / 600 TV lines (14” in 4:3 / 16:9 modes) and 450 / 340 TV lines (9” in 4:3 / 16:9 modes)

BVM-D14H5U stand-alone monitor

Field Use

- 9" monitors*
- Optional lithium-ion battery packs available for added convenience
- Optional Monitor ENG kit (hood and rear protector) available
- Audio capability, built-in speaker, and simple stand for added versatility in the field (BVM-D9H5U only)

BVM-D9H5U stand-alone monitor with optional VF-508 Monitor ENG kit

* 32”, 24”, 20”, 14” and 9” refer to the CRT size. For viewable area, measured diagonally, please refer to the specifications.

Features

BVM-D Series Monitor Features

Multiformat Signal Support

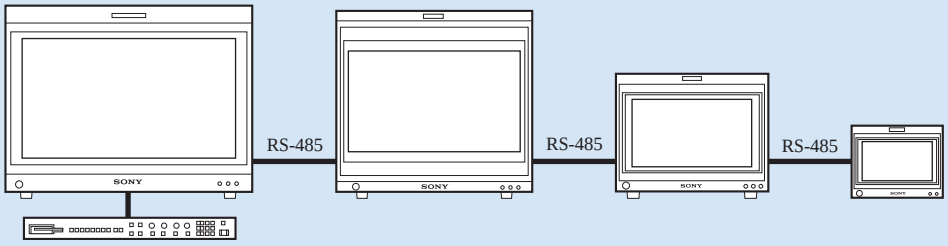
All of these monitors accept signals with a frequency range of 15.625 kHz to 45 kHz, and each picture signal is directly scanned from the original signal using the point scan method to achieve high picture quality.

Acceptable Formats

System	Horizontal scanning frequency	Total lines per frame	Active lines per frame	Frame rate* (Hz)	Scanning format	Aspect	Standard
575/50I (PAL)	15.625	625	575	25	2:1 Interlace	16:9 / 4:3	ITU 601
480/60I (NTSC)	15.734	525	483	30	2:1 Interlace	16:9 / 4:3	ITU 601
575/50P	31.250	625	575	50	Progressive	16:9 / 4:3	—
480/60P	31.469	525	483	60	Progressive	16:9 / 4:3	SMPTE 293M
1080/24PsF	27.000	1125	1080	24	2:1 Interlace	16:9	—
1080/50I	28.125	1125	1080	25	2:1 Interlace	16:9	SMPTE 274M
1035/60I	33.750	1125	1035	30	2:1 Interlace	16:9	BTA S-001B
1080/60I	33.750	1125	1080	30	2:1 Interlace	16:9	SMPTE 274M / BTA S-001B
720/60P	45.000	750	720	60	Progressive	16:9	SMPTE 296M

* Each of the frame rates is also compatible with 1 / 1.001.

System Integration



Control Unit BKM-10R

Only the Sony BVM-D series provides you with models ranging from 9” to 32” that can be controlled in one completely integrated, multi-control system. And, your current E, F, and G series BVM monitors and HDM series monitors can also be controlled in the same system.

- Modular design with separate display and control units
- Parallel and RS-485 serial remote control capability
- Up to 32 monitors can be controlled with one control unit
- Optional rack mounting kits

Superb Picture Reproduction

- HR Trinitron provides high resolution pictures
- SMPTE-C standard phosphors*
- Sony manufactured CRTs provide excellent color uniformity and performance
- Beam current feedback for stable color temperature

* P-22 phosphors are used in the BVM-D9H1U / D9H5U.

Auto Set-up Capabilities

- Built-in auto set-up system for chroma, phase, and white balance
- Precise color temperature adjustment using external color probes: Sony BKM-14L, Graseby SLS 9400, Minolta CA-100, Philips PM 5639, Thoma TF6
- Adjustable color temperature (factory preset to D65)

Aspect Ratio

The BVM-D32E1WU / D24E1WU, with their 16:9 CRTs, are capable of displaying both 16:9 and 4:3 formats. The other models are all equipped with 4:3 CRTs that are also capable of displaying the 16:9 formats. 16:9 and 4:3 aspect ratio masks are supplied with the 20”, 14” and 9” models.

Interchangeable 16:9 and 4:3 aspect ratio masks

Features

32", 24" and 20" Monitor Features

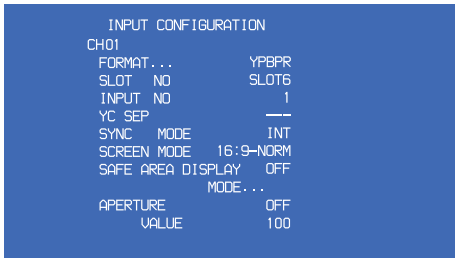
- *Flat surface, 16:9 aspect ratio HR Trinitron CRTs developed specifically for the BVM-D32E1WU and BVM-D24E1WU*
- *Optional BKM-12Y Memory Card for storage and recall of primary set-up data*
- *Safe area display, 4:3 area marker (line, translucent mat, full black mat)*
- *Data transfer between monitors using an optional BKM-12Y Memory Card or via an RS-485 link*
- *ISR (Interactive Status Reporting) for system diagnostics*
- *Built-in test signal generator for crosshatch, 100% white signal, 20% gray signal, gray scale, and PLUGE*

Flat surface, 16:9 aspect ratio HR Trinitron CRT

On-screen Menus for Adjustment and Operation

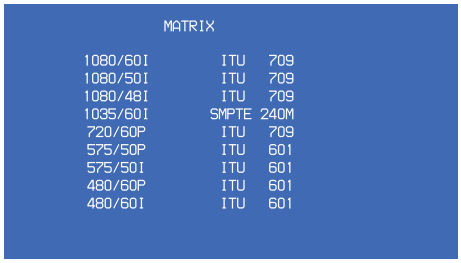
Input Configuration

Depending on the optional boards installed, the settings for the type and location of the input signals can be made from the Input Configuration menu.



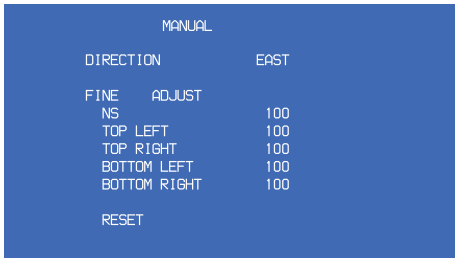
Matrix Interchangeability

Depending on the input signal, one of three matrices (ITU 601, ITU 709, or SMPTE 240M) can be chosen from the Matrix menu.



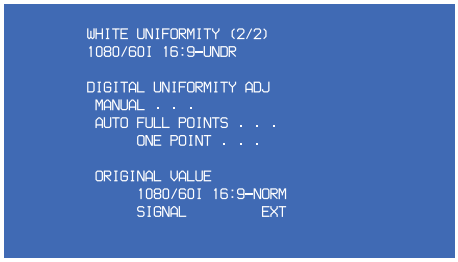
Beam Landing Correction (BVM-D32E1WU/D24E1WU)

The BVM-D32E1WU and BVM-D24E1WU are capable of correcting beam landing shift which may occur as a result of the terrestrial magnetic field. This correction can be made manually or automatically, with the use of the optional BKM-14L Auto Set-up Probe.



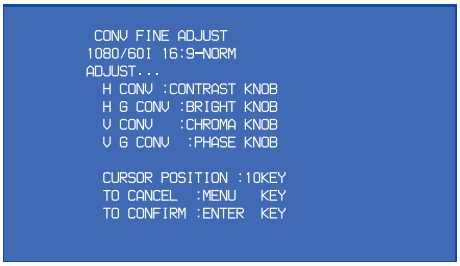
Digital Uniformity (BVM-D32E1WU/D24E1WU)

White can be reproduced uniformly on every point of the screen, even in the peripheral area, through the digital uniformity circuit. This adjustment can be made manually or automatically, with the use of the optional BKM-14L Auto Set-up Probe.



Digital Convergence (BVM-D32E1WU only)

The BVM-D32E1WU is capable of adjusting the convergence at each point of the screen, even in the peripheral area, through the digital convergence circuit. Using the on-screen menu, adjustments can be made to meet any installation.



Decoder and Expansion Boards for 32”, 24” and 20” Monitors

The BVM-D32E1WU, BVM-D24E1WU and BVM-D20F1U are equipped as standard with Analog Component (Y/PB/PR, GBR) input/output connectors and four option slots in the rear panel of the monitor. Depending on the particular system requirements, the most appropriate boards can simply be inserted in the option slots in the rear panel of the monitor. A range of input decoder and expansion boards is available to provide many different input configurations. Although each decoder board has a primary function, when two or more boards are installed at the same time, they combine to accept a much wider range of signal inputs and standards.

BVM-D24E1WU with optional decorder and expansion boards

Separate Control and Display Units

The 32”, 24“ and 20” monitors are designed as display units. However, an optional BKM-10R Control Unit can be easily attached to the 24” and 20” monitors with optional attachment kits.

BVM-D20F1U with optional BKM-10R and BKM-32H attached

Input Decorder and Expansion Board Configurations

Signal format / Adaptor name		BKM-41HD HD SDI Input Adaptor	BKM-42HD HD SDI Input Adaptor	BKM-48X* HD Analog Input Expansion Adaptor	BKM-20D SDI 4:2:2 Decoder Adaptor	BKM-21D SDI Multi Decoder Adaptor	BKM-22X SDI Input Expansion Adaptor	BKM-24N NTSC Decoder Adaptor	BKM-25P PAL Decoder Adaptor	BKM-26M PAL-M Decoder Adaptor	BKM-27T Tri-Standard Decoder Adaptor	BKM-28X Analog Input Expansion Adaptor
Serial digital input	Component 525/625	-	-	-	◎	◎	○	-	-	-	-	-
	Composite NTSC	-	-	-	○	◎	○	-	-	-	-	-
	Composite PAL	-	-	-	○	◎	○	-	-	-	-	-
	575/50P	-	-	-	-	-	-	-	-	-	-	-
	480/60P	-	-	-	-	-	-	-	-	-	-	-
	1080/24PsF	◎	◎	-	-	-	-	-	-	-	-	-
	1080/50I	◎	◎	-	-	-	-	-	-	-	-	-
	1035/60I	◎	◎	-	-	-	-	-	-	-	-	-
	1080/60I	◎	◎	-	-	-	-	-	-	-	-	-
	720/60P	◎	◎	-	-	-	-	-	-	-	-	-
Analog input	Composite NTSC	-	-	○	○	◎	○	◎	○	○	◎	○
	Composite PAL	-	-	○	○	◎	○	○	◎	○	◎	○
	Composite PAL-M	-	-	○	○	○	○	○	○	◎	○	○
	Composite SECAM	-	-	○	○	○	○	○	○	○	◎	○
	Y/PB/PR 525/625	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	GBR 525/625	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
	Y/C NTSC	-	-	○	-	-	-	◎	○	○	◎	○
	Y/C PAL	-	-	○	-	-	-	○	◎	○	◎	○
	Y/C PAL-M	-	-	○	-	-	-	○	○	◎	○	○
	Y/PB/PR, GBR 575/50P	◎	◎	◎	-	-	-	-	-	-	-	-
	Y/PB/PR, GBR 480/60P	◎	◎	◎	-	-	-	-	-	-	-	-
	Y/PB/PR, GBR 1080/24PsF	◎	◎	◎	-	-	-	-	-	-	-	-
	Y/PB/PR, GBR 1080/50I	◎	◎	◎	-	-	-	-	-	-	-	-
	Y/PB/PR, GBR 1035/60I	◎	◎	◎	-	-	-	-	-	-	-	-
	Y/PB/PR, GBR 1080/60I	◎	◎	◎	-	-	-	-	-	-	-	-
	Y/PB/PR, GBR 720/60P	◎	◎	◎	-	-	-	-	-	-	-	-
Number of digital inputs		1	2	-	3	3	3	-	-	-	-	-
Number of analog inputs		1	1	6	3	3	3	6	6	6	6	6

* Equipped with floating/non-floating ground mode selector for hum reduction.

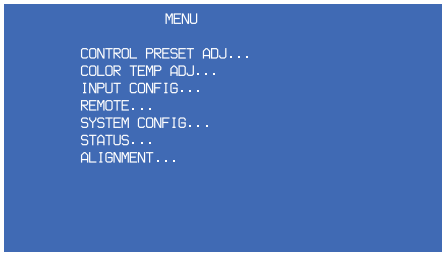
◎ Signal can be reproduced with this adaptor

○ Signal can be reproduced when combined with an appropriate decoder

Features

14″ and 9″ Monitor Features

- *4:3 area marker*
- *Conventional functions, H/V delay, Underscan, Blue only, Mono are available*
- *Equipped with three color Tally (Red, Green, Amber: R + G)*
- *Mountable into a 19-inch EIA standard rack with optional mounting brackets*
- *Copy function enables INPUT CONFIG and SYSTEM CONFIG settings to be copied from other BVM-D14H/D9H monitors connected by serial remote*
- *Simplified menus for greater ease of use*



- *Audio capability and built-in speaker in the bottom of the monitor (BVM-D9H5U only)*
- *Equipped with simple stand (BVM-D9H5U only)*
- *Operate on three alternative power sources: AC power (supplied adaptor), external DC 12 V, optional Lithium-ion batteries BP-L60A/L90A (BVM-D9H1U/D9H5U only)*

BVM-D9H5U with AC adaptor (left) and optional BP-L60A battery pack (right)

The chart below shows the operation times of the 9” monitors when run on batteries. Times may vary depending on the picture, condition of the battery and temperature.

	Battery	Inserted Input Adaptor	
		Analog Component BKM-129X	Full options (max) BKM-142HD + BKM-120D
BVM-D9H1U/ BVM-D9H5U	BP-L60A	Approx. 90 min.	Approx. 60 min.
	BP-L90A	Approx. 150 min.	Approx. 100 min.

Input Boards for 14“ and 9” Monitors

A new series of four input boards has been developed specifically for the 14” and 9” BVM-D series monitors. With three option slots, these monitors are able to accept a wide variety of input signals.

BVM-D14H1U with optional input boards

HD SDI Input Adaptor

◆BKM-142HD

- 2 HD SDI signal inputs / 1 monitor out
- Acceptable HD SDI signals: 1080 / 24PsF, 1080 / 50I, 1035 / 60I, 1080 / 60I, 720 / 60P
- Power consumption: 9 W
- Dimensions: 49.7 (W) x 161.4 (H) x 121.8 (D) mm ($6\,^3/_8$ x $4\,^7/_8$ inches)
- Mass: Approx. 730 g (1 lb 10 oz)

* This board occupies 2 slots

SDI 4:2:2 Input Adaptor

◆BKM-120D

- 2 D1 SDI signal inputs / 2 active outputs with loop-through
- Power consumption: 4 W
- Dimensions: 24.7 (W) x 161.4 (H) x 121.8 (D) mm (1 x $6\,^3/_8$ x $4\,^7/_8$ inches)
- Mass: Approx. 310 g (11 oz)

NTSC / PAL Input Adaptor

◆BKM-127W

- 2 Analog composite with loop-through BNC, Automatic 75 Ω termination / 1 Y / C with loop-through Mini DIN 4-pin, Automatic 75 Ω termination
- Power consumption: 3 W
- Digital 3-lines Comb filter
- Dimensions: 24.7 (W) x 161.4 (H) x 121.8 (D) mm (1 x $6\,^3/_8$ x $4\,^7/_8$ inches)
- Mass: Approx. 270 g (10 oz)

Analog Component Input Adaptor

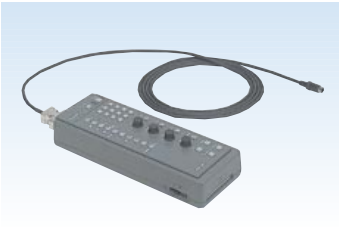
◆BKM-129X

(supplied as standard with 14" and 9" monitors)

- 1 Analog component (Y / P_B / P_R, GBR) with loop-through BNC, Automatic 75 Ω termination / 1 EXT SYNC with loop-through BNC, Automatic 75 Ω termination
- Power consumption: 0.5 W
- Dimensions: 24.7 (W) x 161.4 (H) x 121.8 (D) mm (1 x $6\,^3/_8$ x $4\,^7/_8$ inches)
- Mass: Approx. 250 g (9 oz)

Optional Accessories

Central Control Unit
BKM-10R

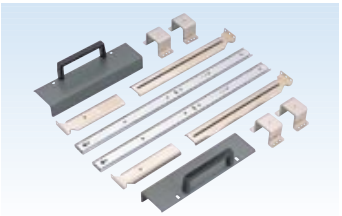


Hand-held Control Unit
BKM-11R

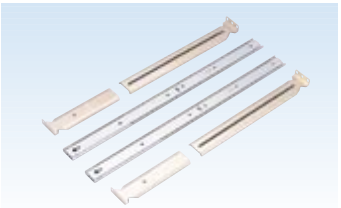
Memory Card
BKM-12Y

Auto Set-up Probe
BKM-14L

19" EIA Standard Rack Mount Kit
for 20" monitors
BKM-30E20



19" EIA Standard Rack Mount Kit
for 14" monitors
BKM-31E14

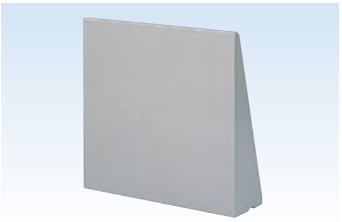


19" EIA Standard Rack Mount Kit
for 14" stand-alone monitors
BKM-30E14

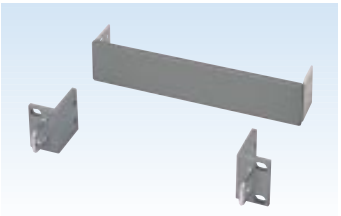
Control Unit Attachment Kit
for BKM-10R with 20" monitor
BKM-32H

NEW

Control Unit Attachment Kit
for BKM-10R with 24" monitor
BKM-34H

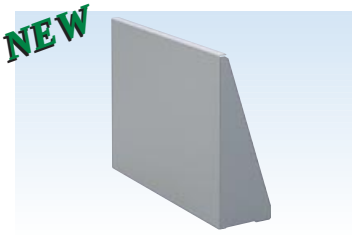


Mounting Panel for EIA Standard Rack (5U)
for 9" stand-alone monitors
MB-509



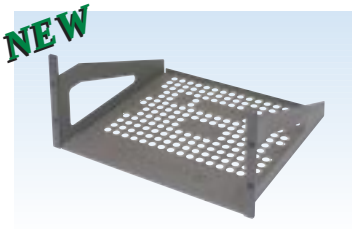
19" Rack Mount Kit
for BKM-10R
MB-510

NEW



Mounting Panel for EIA Standard Rack (4U)
for 9" display unit monitors
MB-519

NEW



19" Rack Mount Kit
for 9" monitors
MB-520

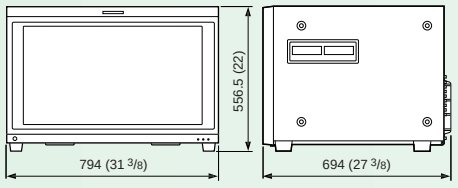
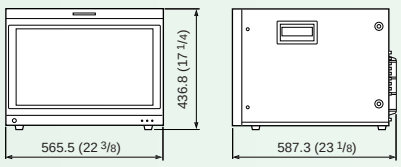
NEW

Monitor ENG Kit (Hood and Rear
Protector) for 9" monitors
VF-508

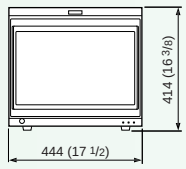
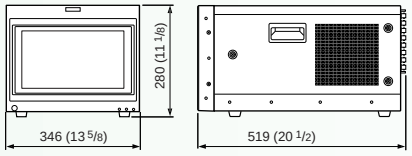
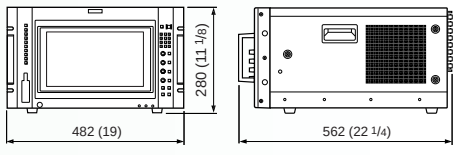
9-pin Cable
for RS-485/422 serial remote control
RCC-5G/10G/30G

Rechargeable Lithium-ion Battery Packs
for 9" monitors
BP-L60A/L90A

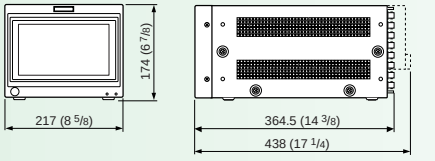
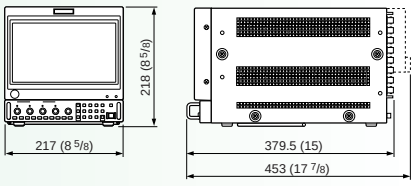
Specifications

				BVM-D32E1WU	BVM-D24E1WU
General	Signal format			15.625 kHz to 45 kHz (For more details, please refer to the Acceptable Formats table)	
	Type			Display unit	
	Power requirements			100 to 240 V AC ± 10%, 50 / 60 Hz	
	Power consumption (with options)			180 W (235 W max.)	155 W (205 W max.)
	Dimensions (including all protruding parts)		mm	794 (W) × 556.5 (H) × 694 (D)	565.5 (W) × 436.8 (H) × 587.3 (D)
			inches	31 3/8 × 22 × 27 3/8	22 3/8 × 17 1/4 × 23 1/8
	Mass			approx. 94 kg (206 lb 13 oz)	approx. 51 kg (112 lb 3 oz)
	CRT	CRT type		32-inch HR Trinitron (flat surface, 16:9 aspect)	24-inch HR Trinitron (flat surface, 16:9 aspect)
		AG pitch		0.32–0.36 mm, 90° deflection, Ø29.1 mm in-line gun	0.25 mm, 90° deflection, Ø29.1 mm in-line gun
		Visual screen (viewable area, measured diagonally)	mm 4:3	491.3 (W) × 368.5 (H), (614.1)	361.6 (W) × 271.2 (H), (452)
			mm 16:9	655.2 (W) × 368.5 (H), (751.7)	482.1 (W) × 271.2 (H), (553.1)
			inches 4:3	19 3/8 × 14 5/8, (24 1/4)	14 1/4 ×10 3/4, (17 7/8)
			inches 16:9	25 7/8 × 14 5/8 , (29 5/8)	19 × 10 3/4 , (21 7/8)
		Phosphor		SMPTE-C	
Inputs/Outputs	Video			BNC × 3, with loop-through	
		GBR		1.0 Vp-p ±6 dB, positive	
		Y		1.0 Vp-p ±6 dB, high impedance	
		PB / PR		0.7 Vp-p ±6 dB, high impedance	
	Ext sync			BNC × 1, with loop-through	
		Composite		0.3 to 8.0 Vp-p, high impedance, tri-level bipolar sync	
	Remote	OPTION		RS-232C for BKM-11R Mini DIN 8-pin	
		CONTROL UNIT		RS-422 for BKM-10R D-sub 9-pin	
		REMOTE 1 / Serial remote		RS-485 serial interface, D-sub 9-pin, with loop-through	
		REMOTE 2 / Parallel remote 1		D-sub 9-pin × 1 (Short to ground)	
		Parallel remote 2		Not Applicable	
		ISR		D-sub 9-pin × 1	
Video signal performance	Differential gain (DG)			Within 5% for luminance from 0 to 70 cd / m²	Within 5% for luminance from 0 to 100 cd / m²
	Differential phase (DP)			Within 5° for luminance from 0 to 70 cd / m²	Within 5° for luminance from 0 to 100 cd / m²
	Frequency response			50 Hz to 30 MHz +1 dB / -3 dB	
	DC restoration			Back porch type, back porch level: within 1% of peak luminance, 10 to 90% APL	
Synchronization	Retrace time	Horizontal		under 3.77 µsec	
		Vertical		under 650 µsec	
Raster and picture performance	Normal scan			5% over scan of the effective picture area	
	Under scan			3% under scan of the effective picture area	
	Linearity			Less than 1.0% within circle centered on the screen with a diameter equal to the vertical height, 2.0% at any other point*	Less than 0.5% within circle centered on the screen with a diameter equal to the vertical height, 1.0% at any other point*
	Color temperature			D65 / D93 / COL 1 / COL 2 (User adjustable)	
	Convergence			Less than 0.5 mm within circle centered on the screen with a diameter equal to the vertical height, 0.8 mm at any other point	Less than 0.4 mm within circle centered on the screen with a diameter equal to the vertical height, 0.7 mm at any other point
	Preset brightness			70 cd / m² (30 fL) (when a 1.0 Vp-p 100% white signal is input)	100 cd / m² (30 fL) (when a 1.0 Vp-p 100% white signal is input)
	Stability of raster size			1.0% of picture height (at 70 cd / m² peak luminescence, 10 to 90% APL)	1.0% of picture height (at 100 cd / m² peak luminescence, 10 to 90% APL)
	Scan delay	Horizontal		Approx. 3/8 line	
		Vertical		Approx. 1/2 field	
	Center resolution			**16:9** 1000 TV lines, **4:3** 1000 TV lines	
Operating conditions	Operating temperature			0 to 35˚C (32 to 95˚F) Optimum operating range 20 to 30˚C (68 to 86˚F)	
	Storage temperature			-10 to 40˚C (14 to 104˚F)	
	Humidity			0 to 90% (no condensation)	
Others	Supplied accessories			AC cable, AC plug holder, Tally label, Fuse, Operation manual	
	Regulation compliance			UL 1950 / CSA 950 (cUL listed), FCC Class-A / IC Class-A, DHHS / DNHW	
Dimensions (mm)					

* 1080 / 60I and 1035 / 60I only.

	BVM-D20F1U	BVM-D14H1U	BVM-D14H5U
	15.625 kHz to 45 kHz (For more details, please refer to the Acceptable Formats table)		
	Display unit		Stand-alone monitor
	100 to 240 V AC ± 10%, 50 / 60 Hz		
	150 W (210 W max.)	100 W (115 W max.)	
	444 (W) × 414 (H) × 570 (D)	346 (W) × 280 (H) × 519 (D)	482 (W) × 280 (H) × 562 (D)
	17 1/2 × 16 3/8 × 22 1/2	13 5/8 × 11 1/8 × 20 1/2	19 × 11 1/8 × 22 1/4
	approx. 38 kg (83 lb 10 oz)	approx. 21 kg (46 lb 3 oz)	approx. 23 kg (50 lb 10 oz)
	20-inch HR Trinitron	14-inch HR Trinitron	
	0.30 mm, 90° deflection, Ø 30.6 mm in-line gun	0.25 mm, 90° deflection, Ø 29.4 mm in-line gun	
	386 (W) × 291 (H), (482) 386 (W) × 218 (H), (443)	267.5 (W) × 200.6 (H), (331.6) 267.5 (W) × 150.5 (H), (306.9)	
	15 1/4 × 11 1/2 , (19) 15 1/4 × 8 5/8 , (17 1/2)	10 5/8 × 8, (13 1/8) 10 5/8 × 6, (12 1/8)SMPTE-C	
	SMPTE-C		
	BNC × 3, with loop-through	BNC × 3, with loop-through, 75 Ω auto terminated	
	1.0 Vp-p ±6 dB, positive		
	1.0 Vp-p ±6 dB, high impedance		
	0.7 Vp-p ±6 dB, high impedance		
	BNC × 1, with loop-through	BNC × 1, with loop-through, 75 Ω auto terminated	
	0.3 to 8.0 Vp-p, high impedance, tri-level bipolar sync		
	RS-232C for BKM-11R Mini DIN 8-pin		
	RS-422 for BKM-10R D-sub 9-pin		Not Applicable
	RS-485 serial interface, D-sub 9-pin, with loop-through		
	D-sub 9-pin × 1 (Short to ground)		
	Not Applicable	Modular connector 6-pin	
	D-sub 9-pin × 1	Not Applicable	
	Within 5% for luminance from 0 to 100 cd / m²		
	Within 5° for luminance from 0 to 100 cd / m²		
	50 Hz to 30 MHz +1 dB / -3 dB	48 Hz to 24 MHz +0 dB / -3 dB	
	Back porch type, back porch level: within 1% of peak luminance, 10 to 90% APL		
	under 3.77 µsec		
	under 650 µsec		
	5% over scan of the effective picture area		
	3% under scan of the effective picture area		
	Less than 0.5% within circle centered on the screen with a diameter equal to the vertical height, 1.0% at any other point*	Less than 1.0% within circle centered on the screen with a diameter equal to the vertical height, 2.0% at any other point	
	D65 / D93 / COL 1 / COL 2 (User adjustable)		
	Less than 0.4 mm within circle centered on the screen with a diameter equal to the vertical height, 0.7 mm at any other point		
	100 cd / m² (30 fL) (when a 1.0 Vp-p 100% white signal is input)	120 cd / m² (35 fL) (when a 1.0 Vp-p 100% white signal is input)	
	1.0% of picture height (at 100 cd / m² peak luminescence, 10 to 90% APL)	1.0% of picture height (at 120 cd / m² peak luminescence, 10 to 90% APL)	
	Approx. 3/8 line	Approx. 1/4 line	
	Approx. 1/2 field		
	16:9 700 TV lines, **4:3** 900 TV lines	**16:9** 600 TV lines, **4:3** 800 TV lines	
	0 to 35˚C (32 to 95˚F) Optimum operating range 20 to 30˚C (68 to 86˚F)		
	-10 to 40˚C (14 to 104˚F)		
	0 to 90% (no condensation)		
	4:3 mask AC cable, AC plug holder, Tally label, Fuse, Operation manual		
	UL 1950 / CSA 950 (cUL listed), FCC Class-A / IC Class-A, DHHS / DNHW		
			

Specifications

				BVM-D9H1U	BVM-D9H5U
General	Signal format			15.625 kHz to 45 kHz (For more details, please refer to the Acceptable Formats table)	
	Type			Display unit	Stand-alone monitor
	Power requirements			100 to 240 V AC ± 10%, 50/60 Hz	
	Power consumption (with options)			60 W (with OPTION: 85 W max.)	
	Dimensions (including all protruding parts)		mm	217 (W) × 174 (H) × 364.5 (438)*1 (D)	218 (W) × 217 (H) × 379.5 (453)*1 (D)
			inches	8 5/8 × 6 7/8 × 14 3/8 (17 1/4)	8 5/8 × 8 5/8 × 15 (17 7/8)
	Mass			approx. 8.1 kg (17 lb 13 oz), 8.9 kg (19 lb 9 oz)*2	approx. 9.3 kg (20 lb 7 oz), 10.1 kg (22 lb 4 oz)*2
	CRT	CRT type		9-inch HR Trinitron	
		AG pitch		0.25 mm, 70° deflection, Ø 21.6 mm in-line gun	
		Visual screen (viewable area, measured diagonally)	mm 4:3	155.4 (W) × 115 (H), (190.7)	
			mm 16:9	155.4 (W) × 87.4 (H), (178)	
			inches 4:3	6 1/8 × 4 5/8, (7 5/8)	
			inches 16:9	6 1/8 × 3 1/2, (7 1/8)	
		Phosphor		P-22	
Inputs/Outputs	Video			BNC × 3, with loop-through, 75 Ω auto terminated	
		GBR		1.0 Vp-p ±6 dB, positive	
		Y		1.0 Vp-p ±6 dB, high impedance	
		PB/PR		0.7 Vp-p ±6 dB, high impedance	
	Ext sync			BNC × 1, with loop-through, 75 Ω auto terminated	
		Composite		0.3 to 8.0 Vp-p, high impedance, tri-level bipolar sync	
	Remote	OPTION		RS-232C for BKM-11R Mini DIN 8-pin	
		CONTROL UNIT		D-sub 9-pin (RS-485/422 switchable)	Not Applicable
		REMOTE 1/Serial remote		RS-485 serial interface, D-sub 9-pin, with loop-through	
		REMOTE 2/Parallel remote 1		D-sub 9-pin × 1 (Short to ground)	
		Parallel remote 2		Modular connector 6-pin	
		ISR		Not Applicable	
Video signal performance	Differential gain (DG)			Within 5% for luminance from 0 to 100 cd/m²	
	Differential phase (DP)			Within 5° for luminance from 0 to 100 cd/m²	
	Frequency response			48 Hz to 17 MHz +0 dB/-3 dB	
	DC restoration			Back porch type, back porch level: within 1% of peak luminance, 10 to 90% APL	
Synchronization	Retrace time	Horizontal		under 3.77 µsec	
		Vertical		under 650 µsec	
Raster and picture performance	Normal scan			5% over scan of the effective picture area	
	Under scan			3% under scan of the effective picture area	
	Linearity			Less than 2.0% within circle centered on the screen with a diameter equal to the vertical height	
	Color temperature			D65/D93/COL 1/COL 2 (User adjustable)	
	Convergence			Less than 0.4 mm within circle centered on the screen with a diameter equal to the vertical height, 0.7 mm at any other point	
	Preset brightness			120 cd/m² (35 fL) (when a 1.0 Vp-p 100% white signal is input)	
	Stability of raster size			1.0% of picture height (at 120 cd/m² peak luminescence, 10 to 90% APL)	
	Scan delay	Horizontal		Approx. 1/4 line	
		Vertical		Approx. 1/2 field	
	Center resolution			**16:9** 340 TV lines, **4:3** 450 TV lines	
Operating conditions	Operating temperature			0 to 35°C (32 to 95°F) Optimum operating range 20 to 30°C (68 to 86°F)	
	Storage temperature			-40 to 40°C (14 to 104°F)	
	Humidity			0 to 90% (no condensation)	
Others	Supplied accessories			4:3 mask, AC cable, AC plug holder, AC adaptor, Tally label, Operation manual	
	Regulation compliance			UL 1950/CSA 950 (cUL listed), FCC Class-A/IC Class-A, DHHS/DNHW	
Dimensions (mm)					

*1 Depth with AC adaptor
*2 Mass with AC adaptor

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